

# TML Multi-channel Digital Strainmeter **DRA-30A**

TML PamE-456B



The DRA-30A is a multi-channel digital strainmeter designed for on-line measurement with a PC. With the supplied application software both DRA-730AD and DRA-730AS, the instrument can serve as both digital dynamic strainmeter and multi-channel simultaneous sampling data logger. A data memory of 112k words is provided for each channel (Max. 30000 scans for static measurements.) Strain measurements in quarter with 3-wire, half and full bridge and voltage measurements are possible for each channel. As all channels have one-touch connector receptacles and bridge boxes, strain gauges and stain gauge based transducers can be easily connected. Communication with a PC is made via GP-IB or USB 1.1 interface.



**Static measurement**  
**DRA-730AS**



**Dynamic measurement**  
**DRA-730AD**

*Either dynamic strain measurement or static strain measurement available by clicking icons.*

*Possible quarter (in 3-wire system), half and full bridge and voltage measurements.*

*One-touch connector receptacles and bridge box provided for each channel.*

*Each channel incorporates A/D converter for simultaneous measurements and saves in digital values for all channels.*

*Data memory of 112k words for each cahnnel (30000 scans for static measurements).*

*On-line measurement with a PC using built-in GP-IB or USB 1.1 interface.*

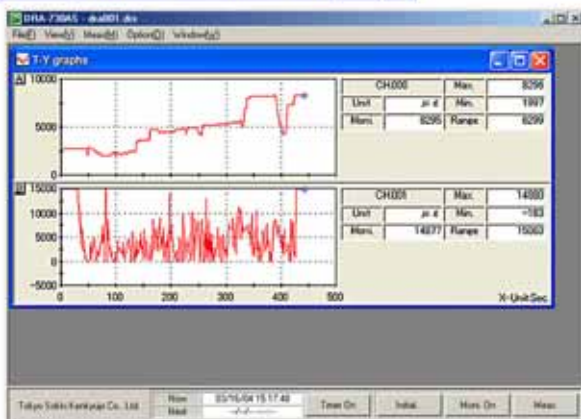
*Strain input has isolation and high impedance for each channel.*

*Operates on both AC90 ~ 250V(50/60Hz) and DC10 ~ 30V*

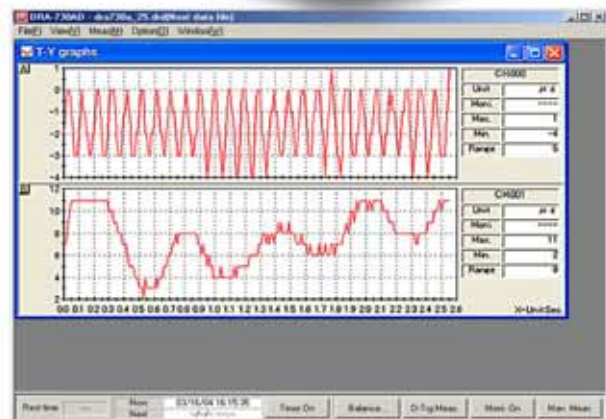
*Control software both DRA-730AS amd DRA-730AD supplied as standard accessory*



## Graphical monitor display



T-Y graphs exemplmed on static measurement



T-Y graphs exemplmed on dynamic measurement



**Tokyo Sokki Kenkyujo Co., Ltd.**

# SPECIFICATIONS

## Multi-channel Digital Strainmeter DRA-30A

<b>No. of channels</b>	30
<b>Measurement section</b>	
<b>Strain input</b>	
Quarter bridge in 3-wire system	120Ω
Half bridge	120~1000Ω
Full bridge	120~1000Ω
Gauge factor	2.00 fixed
Bridge excitation	2V dc
Initial value memory	±10000×10 <sup>-6</sup> strain
Measuring range	±20000×10 <sup>-6</sup> strain
<b>Accuracy</b>	
static in full bridge	±(0.2% reading + 3 digit)
dynamic	±(0.2% reading + 5 digit)
<b>Resolution</b>	1×10 <sup>-6</sup> strain
<b>Stability</b>	
on Zero	±2×10 <sup>-8</sup> strain/°C or less (Dynamic)
on Span	±0.01%/°C
<b>Voltage input</b>	
Input method	Isolated differential input
Input impedance	Approx. 100kΩ + 100kΩ
Measuring range	±10V
<b>Accuracy</b>	
Static	±(0.2% reading + 3 digit)
Dynamic	±(0.2% reading + 5 digit)
<b>Resolution</b>	1mV
<b>Stability</b>	
on Zero	±2mV/°C or less
on Span	±0.1%/°C
<b>DIGITAL INTERFACE</b>	
Cascade connection	GP-IB (IEEE488), USB1.1 14 units max. (10 units max. with supplied GP-IB cable CR-50)
Digital output	Monitor values, Record data (ASCII, Binary), Set values, Status
<b>GENERAL SPECIFICATION</b>	
Operating temperature	0~+50°C 85%RH or less (no condensation)
Power supply	AC90~250V 50/60Hz 100VA MAX DC10~30V 3.5A MAX
Dimensions	380(W)×148(H)×486(D)mm
Weight	12kg
<b>CONTROL PROGRAM</b>	
Operation	MS-Windows™ application software for controlling DRA-30A
DRA-730AS	Static measurement
DRA-730AD	Dynamic measurement
Supplied in CD-ROM and to be installed in hard disk	
Function	Control/Data reading for DRA-30A
Interface	GP-IB or USB 1.1
CPU	Pentium II, 400MHz or higher
Main memory	64MB or more
Display	1024×768 dot resolution or better
Users' HDD capacity	10MB or more
OS	MS-Windows 2000, XP™

<b>DYNAMIC MEASUREMENT</b>	
Sampling speed	100~900 μ sec in step of 100 μ sec 1~32767 msec in step of 1msec
Low-pass filter	Amplitude flat (30,100,300, 1k, PASS) Hz -3dB ± 1dB
Slope	-12dB ± 1dB/oct
Frequency response	DC~3kHz (-3dB ± 1dB)
<b>High-pass filter</b>	
Cut-off	0.1Hz ± 0.05Hz
Slope	-6dB ± 1dB/oct
<b>Data memory</b>	112k words/channel
<b>Trigger function</b>	
Data trigger	By data of any channel (arbitrary input level or arbitrary relative level from start)
Command trigger	By command from computer
Self-diagnostics	Amplifier sensitivity, Input open-circuit, Memory

<b>STATIC MEASUREMENT</b>	
<b>Interval timer</b>	
Function	Start by set time interval or time
Time	Year/Month/Day/Hour/Minute and Second
Interval	In step of 1 sec. to 99 hrs. 59 min. and 99 sec.
No. of starts	Max. 99 times per step or infinite
No. of steps	Max. 30 steps programmable
Real time start	Start time (Day/Hour/Min./Sec.) per step can be set
GOTO step	Possible program loop to previous step
<b>Data memory</b>	
Function	Saving/Reading measured data
Contents	Channel numbers, measurement data, Time data
Capacity	Approx. 30000 scans
<b>Self diagnostics</b>	
Amplifier sensitivity	
Input open :	[*****]
Input over (+) :	[+*****]
Input over (-) :	[-*****]

### STANDARD ACCESSORY

Operation manual	1
AC power cable (CR-01)	1
DC power cable (CR-10)	1
GP-IB cable (CR-50)	1
Plus driver	1
Measurement software (CD-ROM)	1
Software manual	1

ISO9001



Approval Certificate No: 0957261  
Design and manufacture of strain measuring equipment and transducers  
No.2 and No.3 Production Divisions



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